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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,394	02/24/2000	Kyou-Yoon Sheem	3364.P039	5787

7590

12/26/2001

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 12/26/2001

6

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-6

Office Action Summary

Application N .

09/512,394

Applicant(s)

SHEEM ET AL

Examiner

Mercado A Julian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

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DETAILED ACTION

Election/Restriction

Applicant's election of Group II, claims 1-10 in Paper No. 5 is acknowledged. Because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 11-16 are thus withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the instant core and carbon shell formed around the core must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 3, 5, 6, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilson *et al* (U.S. Pat. 5,624,606).

Wilson teaches a negative active material, i.e. an anode material, comprising a carbonaceous core. (Col. 5 line 63 *et seq*) The material is pre-graphitic carbon having both organized and disorganized structural regions. Such a structure is deemed a mixture of crystalline and amorphous carbon. A carbon shell comprising an alkali metal such as Na or a semi-metal such as Si is inserted into the disorganized, i.e. amorphous region formed around the core. (Col. 3 line 51 *et seq*, col. 4 line 13 *et seq*) At the (002) plane, the core has a value within the instant 3.35 to 3.7 Å. (Col. 4 line 6)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson *et al* as applied for claims 1, 3, 5, 6, 8 and 10 above.

The teachings of Wilson are discussed above.

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Wilson does not explicitly teach the active material to have a shoulder at 700 °C or more in differential thermal analysis. However, in view of Wilson's anticipation of the claimed invention as recited in claim 1, it is reasonably presumed that the active material would naturally flow to have the same measurable property absent of a structural distinction between the patentee's active material and that which is claimed by Applicant.

Wilson does not explicitly teach the amount of the metal from 0.1 to 25 wt% of the core. However, it would have been obvious to one of ordinary skill in the art to optimize the amount of metal, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges for a result-effective variable involves only routine skill in the art. *In re Aller*, 105 USPQ 233. The amount of metal in a carbonaceous compound is considered result-effective in that it directly affects battery capacity and reversibility.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson *et al* as applied for claims 1-10 above, in view of MacFadden (U.S. Pat. 5,772,934).

The teachings of Wilson are discussed above.

Wilson does not explicitly teach the metal to be a transition metal or an alkali metal. However, MacFadden teaches a transition metal such as Ni and an alkali metal such as Mg in combination with a carbonaceous material. (Col. 3 line 41 *et seq*) Thus, the skilled artisan would have found obvious to modify Wilson's invention by employing these metals in the

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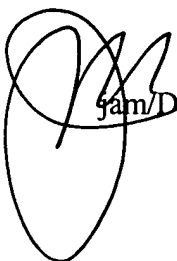
carbonaceous material for reasons such as employing an active material with known electrochemical properties.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. The unofficial fax number is (703) 306-3429.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

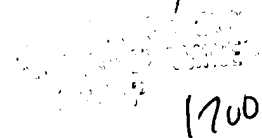


jam/December 14, 2001

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